



BUILDING THE AUTOMOTIVE INDUSTRY OF 2030

Customers, cars, the industry – all will
look different

THE AUTOMOBILE IS arguably the most successful product of the past century, and there is little evidence that people want to give up what it offers: fast, autonomous mobility over long and short distances at an affordable price. But the industry is about to be transformed by multiple revolutions – from drivetrains that power vehicles to digitally connected ecosystems, which are reinventing driving and the customer experience.

First, vehicles will run on different power sources. Electric vehicles make up an increasing proportion of new models sold, and other new technologies such as fuel cells are being developed. But for some time to come, many vehicles will continue to be powered by conventional combustion engines. Second, connected systems mean that humans play a diminishing role in actually driving cars, as autonomous vehicles navigate roads, reducing accidents and freeing up people's time by converting them from drivers into passengers. Third, a greater focus by customers on mobility – and reduced emphasis on ownership – will change the way cars are used, especially in big cities.

These upheavals will be accompanied by broader challenges. The shift to less-complex battery power, combined with improvements in design and manufacturing, will make vehicles more robust, and many components will need to be replaced less often. The growth of battery power and digital driving systems will mean a place in the industry for both new automotive players and other companies, in particular from China and the digital world. Meanwhile, the re-emergence of protectionist trade barriers will push manufacturers increasingly to base production in the region where the cars are sold, making large-scale exports harder, including those of German premium producers.

These changes will shake up the structures and systems on which the auto industry is based. As well as their traditional suppliers, automakers will need to work with new digital firms. Operations will be simplified dramatically, as rival automakers share more components such as electric powertrains and vehicle platforms. We also expect hyper-efficient mega-factories to emerge. As a result, stable market shares and supplier relationships will be replaced by winner-takes-all markets for specialist technology products that are essential for making or using cars effectively. These shifts will mean the industry needs a workforce with different skillsets from today.

However, the industry's primary focus should be on its customers and the products it makes for them. Here are three major trends that will dominate the products and solutions of the new era.

ONE – THE NEW CUSTOMER

Until recently, customers have mostly picked a single car to fulfill an array of requirements. (See Exhibit 1.) The choice was primarily a function of mobility needs: commuting, business trips, and family errands. But drivers of means could opt for a model that was more fun to drive and accorded them social status.

In the future, the majority of people will be “mobilists” who simply want to get from point A to B and are not emotionally involved in cars. They might want to go from a station or airport in a foreign city to a business meeting, buy furniture and ferry kids around, or take the occasional trip to the beach or mountains. Though the driver of the past might have chosen a model that can fulfill each of these needs, the car user of the future will seek the best solution for each task. Depending on the local options, that could mean a ride-hailing service, taxi, rental car, car-sharing service, public transport – or, of course, their own car.

These new patterns will create natural customers for mobility services, which are already growing fast, and could accelerate the shift away from traditional ownership. Some people will cease to own a car due to the expense, as tighter regulation increases the cost of powertrains, taxes rise for political reasons, and raw material prices go up. Others will be put off buying a car because of urbanization: Driving in cities involves extra costs such as parking and is generally no longer a pleasure; many people simply want to get around with as little hassle as possible. As populations age, a growing number of people will just need ways to stay mobile – in some cases because they

EXHIBIT 1: CUSTOMERS: FRAGMENTATION OF USE CASES

The customer experience is changing over time



Source: Oliver Wyman analysis

can no longer drive themselves – and they will not care whether they get around by way of traditional driving. In these cases, flexible pay-per-use models will provide an alternative. We think that in Germany and the United States spending on car-based individual mobility services will double by 2040, while in China it could triple.

To cope with these new patterns of demand, brands need to become leaders in specific use cases to regain importance – automotive heritage and history no longer mean much to many people. At one extreme, vehicles used in mobility services will have a large number of different users, perhaps more than 100 per year. They will be on the road for a greater proportion of the time than current vehicles. And they will generate demand for new options, such as parking assistants and massage seats. So automakers will have to design cars with these changes in mind. Vehicles will need to be damage-resistant and low-maintenance so that they can easily be used by multiple users. This usage pattern could drive demand for frugal vehicle concepts that are suited for multiple users – a bit like the aircraft interior of a discount airline. Automakers will have to deal with the new mobility fleet operators as customers. Fleet operators will be better negotiators than individuals, and they will demand tailored products, as well as favorable conditions and pricing. They will have far greater market power than traditional, individual customers, and they will put pressure on prices and margins.

That said, traditional car ownership is not about to vanish. Many of these mobility services will run into their own problems of feasibility – and, when the services do work, they will often tempt people away from public transport rather than from car ownership. Moreover, there will remain a solid core of automobile connoisseurs, especially in the countryside but also among wealthy city dwellers. These consumers love cars and driving and will hold out against anything – from battery power to ride hailing – that diverges from the traditional experience, so long as this remains legally possible. They want speed and acceleration, the sound of a V8 engine, heightened comfort, and classic looks, and are ready to pay for it.

TWO – NEW TECHNOLOGY, NEW CARS

As customers demand new functions in cars, new technology will push other changes. Electrification is happening, but its rate is hard to predict. Environmental considerations are the driving force behind electric vehicles, but these are a relatively minor factors in most car purchase decisions. Without government legislation or incentives, electric vehicles might only make up 10 percent of new vehicle sales by 2030. A complete ban on sales of new cars with internal combustion engines could turn some markets almost 100 percent electric. Current moves by cities to gradually increase their restrictions on internal combustion engines suggest a scenario that could lead to electric vehicles representing 30 percent of sales by 2030. So, for the next decade or

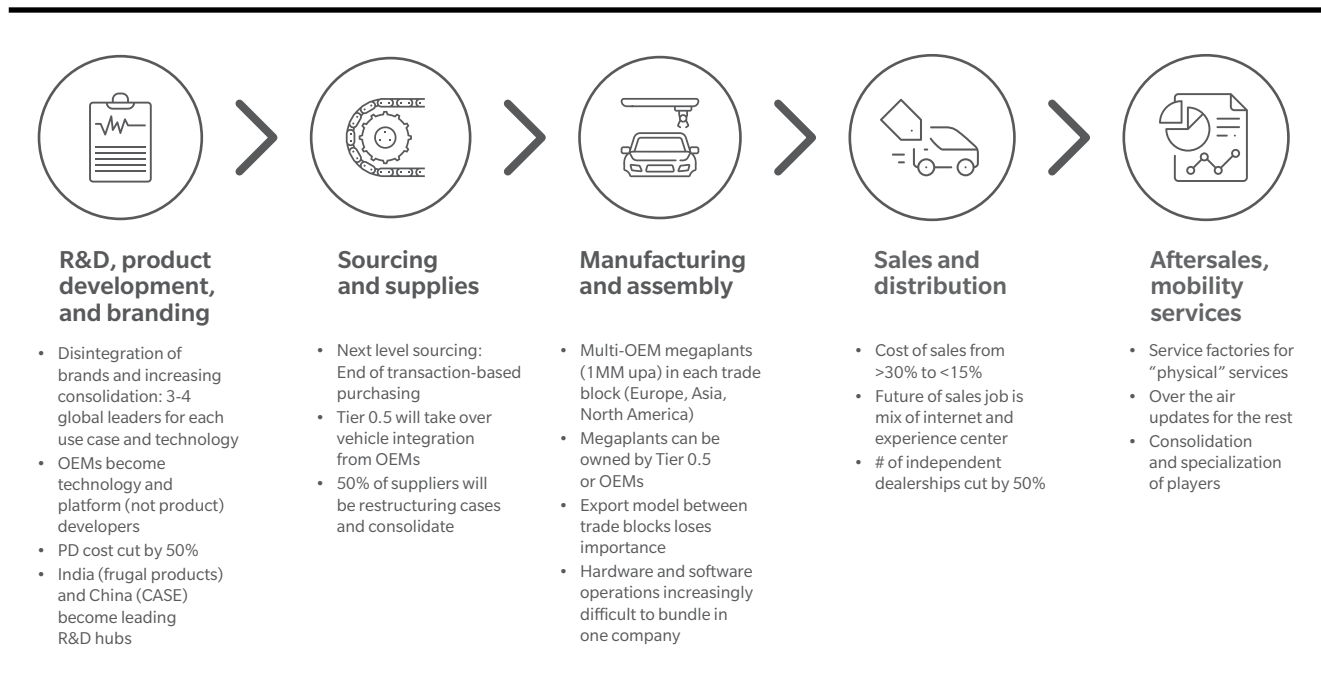
more, automakers will need to produce cars with different powertrains – probably adding fuel cells to internal combustion engines and battery-powered vehicles.

Modular design will enable automakers to continue to manufacture large numbers of variants around a single platform and in a single plant, increasing flexibility and reducing overcapacity. The same principle will apply to infotainment systems, for which the industry will increasingly use standard displays, operating systems, software layers, and input devices.

Electronic systems – and mobile communications in particular – will enable drivers to spend less time driving while in their cars and more time doing other things. Technology shifts can also be expected in safety, with progress in braking, steering, crash protection, and advanced driver-assistance systems. In all these areas, automakers will have to build up competence in technologies where other industries have already set the standards. However, many components of the new systems will be made by market-leading specialists. These leaders will supply automakers, which will find it more economical to buy in these specialist technologies than to develop them in-house.

EXHIBIT 2: AUTOMOTIVE INDUSTRY 2030

The changes in the automotive industry will affect the whole value chain



THREE – THE STRUCTURE OF THE AUTOMOTIVE INDUSTRY IN 2030

Technology advances and increasingly varied demand will mean that automakers themselves develop less and less of what they produce. One area where the traditional auto industry lacks skills is software, and much of the new technology that will go in cars is first being developed outside the automotive world, in particular by digital companies.

The fastest – in some cases the only – way for automakers to develop their own mobility services and electrically powered, self-driving vehicles is through strategic partnering with specialist technology firms. Those companies that fail to do so are likely to lag rivals in developing sophisticated products such as self-driving cars and end up falling far behind the pack. In contrast, first movers may become the standard setters in an area of new vehicle technology, adding a new business to their traditional one. There is an incentive for the technology firms too, many of which are startups: To get their technology to market, they will need strong relationships with automotive industry players.

Another reason to form alliances is to share the huge cost burdens of developing the next generation of mobility. Automakers need to make big technological leaps in both propulsion – electric vehicles and more-efficient internal combustion engines – and in the digital transformation of the driving experience. In particular, the development of fully autonomous driving will be too expensive for a single automaker to do by itself. In the race to develop the car of the future, those that collaborate will win.

As automakers reach out to new kinds of partners, the traditional industry structure, based on vertical supply chains, is being replaced by an array of new relationships – for example between automakers and digital companies and between different automakers. The successful industry participants will increasingly be those that master particular skills or specialize in specific areas of technology. There will be three or four global specialists in each of the major technologies the industry depends on, such as electric powertrains, vehicle connectivity systems, and autonomous-driving hardware and software. The markets for these products will be dominated by the winners, and the number of independent companies will be significantly reduced, including carmakers, suppliers, dealers, and aftersales companies. Moreover, the total number of traditional jobs required in the industry will be reduced as technologies become less hardware-driven and more standardized. (See Exhibit 2.)

UNPRECEDENTED CHANGE

Carmakers have managed to master an impressive range of challenges over the past decades. However, the stakes are higher than they used to be, and the coming upheavals will be on a much greater scale. For companies that grasp the new realities, there are opportunities to position themselves innovatively so that they prosper in the market of the future. One thing is certain, the changes will be fast, and only those players that move quickly and make bold decisions will be able to thrive.

AUGUST JOAS

Partner

August.Joas@oliverwyman.com

SIMON SCHNURRER

Partner

Simon.Schnurrer@oliverwyman.com

FABIAN BRANDT

Partner

Fabian.Brandt@oliverwyman.com